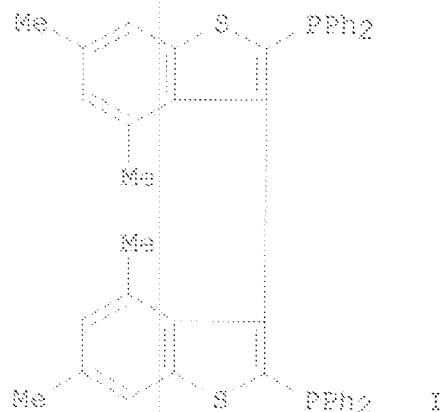


16/590,140

PATENT ASSIGNEE(S): Trimarco, Licia
 SOURCE: Italfarmaco Sud S.P.A., Italy
 PCT Int. Appl., 68 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9601831	A1	19960125	WO 1995-EP2647	19950707
W: AM, AO, BE, BG, BR, BY, CA, CN, CZ, DE, FI, GE, HU, IS, JP, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN				
RW: KE, MW, SD, SZ, OG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MF, NE, SN, TD, TG				
CA 2193889	A1	19960125	CA 1995-2193889	19950707
CA 2193889	C	20020910		
AU 9530764	A	19960209	AU 1995-30764	19950707
AU 685660	B2	19980122		
EP 770085	A1	19970502	EP 1995-943147	19950707
EP 770085	B1	19990922		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, NL, PT, SE				
HU 75997	A2	19970630	HU 1997-54	19950707
HU 221381	B1	20020928		
JP 10502387	T	19980303	JP 1996-S04117	19950707
JP 2330611	B2	20020930		
CN 1190397	A	19980812	CN 1995-194093	19950707
AT 184873	T	19991015	AT 1995-943147	19950707
ES 2136896	T3	19991201	ES 1995-943147	19950707
CZ 292465	B6	20040512	CZ 1997-83	19950707
US 5907045	A	19990525	US 1996-765479	19961223
US 6132191	A	20001017	US 1999-286582	19990405
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US 6077958	A	20000620	US 1999-300531	19990427
GR 3031443	T3	20000131	GR 1999-402532	19991007
US 6586357	B1	20030701	US 2001-938354	20010824
PRIORITY APPLN. INFO.:			IT 1994-MI1438	A 19940712
			WO 1995-EP2647	W 19950707
			US 1996-765479	A3 19961223
			US 1999-286583	A3 19990405

OTHER SOURCE(S): CASREACT 124:317487; MARPAT 124:317487
 GI



AB Chiral diphosphines constituted by an aromatic pentat. biheterocyclic system, suitable to act as chiral ligands, complexes between said diphosphines and transition metals, and their utilization as chiral catalysts in stereoccontrolled reactions, such as diastereoc- and enantioselective reduction

reactions is described. Process for the preparation of said chiral diphosphines and process for the preparation of said complexes and for their utilization as chiral catalysts in stereoccontrolled reactions is discussed. Thus, lithiation of 3-bromo-4,6-dimethylbenzo[b]thiophene with

BuLi in Et₂O followed by treatment with CuCl₂ and acidic workup gave 4,4',6,6'-tetramethyl-3,3'-dibenzo[b]thiophene (I). Lithiation of I with

BuLi in THF/TMEDA followed by phosphinylation with Ph₂PCl gave

2,2'-bis(diphenylphosphino)-4,4',6,6'-tetramethyl-3,3'-dibenzo[b]thiophene (II). Oxidation of II with H₂O₂, resolution of the phosphine oxide, followed by

BSiCl₃ reduction gave title optically pure diphosphines (R)-I and (S)-I.

Catalyst prepared by the reaction of (R)-I with [RuCl₂(C₆H₆)]₂ enantioselectively reduced 3-oxo-ethylbutyrate to (R)-(-)-3-Et hydroxybutyrate.

OS.CITING REF COUNT: 24 THERE ARE 24 CAPLUS RECORDS THAT CITE THIS RECORD (30 CITINGS)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

10/590,140

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2009 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2002:508207 CAPLUS <<LOGINID::20090727>>
DOCUMENT NUMBER: 137:217263
TITLE: Free design of chiral diphosphine chelating ligands
for stereoselective homogeneous catalysis by
assembling five-membered aromatic heterocycles
AUTHOR(S): Benincori, T.; Pizzo, S.; Sanniccolo, F.
CORPORATE SOURCE: Dipartimento di Scienze Chimiche, Fisiche e
Matematiche, Universita dell'Insubria, Como, 22100,
Italy
SOURCE: Journal of Heterocyclic Chemistry (2002), 39(3),
471-485
CODEN: JHTCAD; ISSN: 0022-152X
PUBLISHER: HeteroCorporation
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Two very modular class of C2 and C1 diphosphine
atropisomeric
chelating ligands were designed. The most interesting features of
these
ligands were related to the possibility of modulating the electronic
properties at phosphorus through the inherent electronic availability
of
five-membered aromatic heterocycles constituting the backbone. This
modular
design was very useful to tailor the structure of the ligand according
to
the requirements imposed by the reaction typol. and by the substrate.
Evidence was given for the strong relationship existing between the
electronic availability at phosphorus of the free ligands and the
kinetic
behavior of their metal complexes when employed as homogeneous
chiral catalysts; the reaction rate of exo-ester hydrogenation
was enhanced by metal complexes produced from electron-rich
diphosphines, while enantioselective Heck reaction preferred catalysts
originating from electron-poor ligands.
OS CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS
RECORD (12 CITINGS)
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR
THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L7 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2009 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 1996:259498 CAPLUS <<LOGINID::20090727>>
DOCUMENT NUMBER: 124:317487
ORIGINAL REFERENCE NO.: 124:58888h,58889a
TITLE: Heteroaromatic diphosphines as chiral ligands
INVENTOR(S): Antognazza, Patrizia; Benincori, Tiziana; Brenna,
Elisabetta; Cesarotti, Edoardo; Sanniccolo',
Francesco;